



# SNAKE BITE MANAGEMENT IN AYURVEDA WITH SPECIAL REFERENCE TO KERALIYA VISHA CHIKITSA

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## ABSTRACT

WHO recognizes snake bite as top priority neglected tropical disease. Snake bite envenomation is an important public health issue mostly affecting those who live in rural area, in developing countries. India is estimated to have highest number of snakebite mortality in the world according to WHO with a frequency of 83,000 bites per annum with 11,000 deaths. The most of the envenomation was by Russell's Viper followed by Kraits and Cobras. Snake bites are considered as a major health problem in North Kerala, among bites, Hump nosed pit viper cases are relatively more and the effectiveness of the antivenom against its bite worsen the problem. Highest number of cases was reported from Kozhikode (1,125) followed by Kannur and Palakkad and least number of cases in Idukki. *Agad Tantra* deals with almost all possibilities of poisoning especially snake bite management. Kerala has developed its own snake bite management protocols by widely practicing *visha vaidyas* at that time and recorded in *Keraliya visha chikitsa granthas*. They had introduced special treatment modalities like *ooth chikitsa*, *talam*, *Tukkudhara* etc. This review details such special treatment modalities mentioned in *Vishavaidya Jyotsnika* and *Prayoga Samuchaya* with special reference to *Darvikara visha chikitsa*.

**KEYWORDS:** *Keraliya visha chikitsa*, *Sarpa visha chikitsa*, *Darvikara visha chikitsa*.

## Introduction:

Acharya has pinpointed the minute details about the symptomatic changes occurring in an envenomation case in accordance with the passage of time through the concept of *visha vega*. *Vega* is calculated as the time taken by *visha* to spread from one *dhatu* to next *dhatu*. Symptoms produced by *visha* in each *dhatu* is quite different and by noticing these symptoms physician can easily understand the pathway of *visha* and can give treatments at the earliest to prevent its spread into next deeper *dhatu*s. So faster acting medicines and treatments have given prime importance in the context of *Sarpa visha chikitsa*. Kerala due to its geographical peculiarities encountered envenomation more than any other places which necessitated the physician to get expertised in *visha chikitsa*. Thus they developed their own treatment protocols using locally available medicines. In brief snake bite management in *Ayurveda* can be classified under these 4 headings:

- 1) *Sadya karaniya in sarpa visha*
- 2) *Samanya chikitsa of sarpa visha*
- 3) *Vishesha chikitsa of sarpa visha*
- 4) *Upadrava chikitsa*

## *Sadya karaniya in sarpa visha:*

The first aid management was explained by all textbooks except *Gauthamiya kashayapa samhita*. *Bhrihatrayis* and *Vishavaidya jyotsnika* has mentioned similar measures and one exception is that *Vishavaidya jyotsnika* has not mentioned *Aristabandana*. And all the textbooks states the importance of *sadya karaneeya chikitsa upayas* by saying that the *visha* will remain only for 100 *matra* at the bite site. (*Gauthameeya kashayapa samhita* states it as 500 *matra*)<sup>1</sup>. All textbooks has mentioned *Hridayavaranam* but in *vishavaidya jyotsnika* term has not mentioned but several *ghrita yogas* have mentioned which can be taken in this regard.

Table No. 1: *Bhrihatrayi's*

References	Procedures
<i>Charaka Samhita</i> <sup>2</sup>	<i>Venika bandana – nispeedana – acushana – raktamokshana – seeta pradeha and seka</i>
<i>Susrutha Samhita</i> <sup>3</sup>	<i>Aristabandana – dahana – acushana – raktamokshana – Agada lepanam – parisekam</i>
<i>Astanga sangraha</i> <sup>4</sup>	<i>Utkartana – bite the snake / stone – application of karnamala – aristabandana with mantra – nispeedana – acushana – Agada lepanam – sechanam – raktamokshana – seethalepa and sekha- hridayavaranam – Vamana</i>

## *Vishavaidya Jyotsnika:*

Importance of *mantra* is highlighted. First aid measures are mentioned in that primarily asked to bite the snake itself for regaining the confidence of patient. Application of *strothramala* and *dahanam* with *lohadi* is indicated. Thereafter *jalandhara* and *dhatugata visha chikitsa* is mentioned which is same as that of *Prayoga sammuchaya*.

## *Prayoga sammuchaya:*

The foremost procedure mentioned in this book is to bite the snake itself, which is meant to increase our confidence / *manobalam*. Frightening will cause *vatavidhi* which further causes spread of *visha* into deeper tissues. After that, application of *strothramala* as said in *ashtanga hridya* is mentioned here also. First measure to be adopted is *raktamokshana* and after that *dahana karma* is indicated. The *dahana karma* is contraindicated in *mandala dams*. *Dahana* is followed by *parisekham*. Here *jalandhara* is indicated. *Dhara* helps in reducing the peripheral circulation, thereby reduces spread of venom. In contrast to classical texts, *aristabandana* is said to be done after these procedures. *Aristabandana* should be done above 4 *angula*, triangular in shape with two knots and same simile explained by *Susrutha Acharya* has quoted here in order to signify the usage of *aristabandana*. Thus the chapter *sadhyodashta chikitsa* comprises of measures which check the spread of venom<sup>5</sup>.

## *Jalandhara*<sup>6</sup>:

*Keralaleeya visha chikitsa granthas* as a first aid measure and was practising with much importance. It is said to maintain a continuous flow of water as *dhara*. *Seetha Parisekham* / *dhara* helps to decrease *pitta prakopa* and also decreases the rate of peripheral circulation by Vasoconstriction and thereby retarding the spread of *visha*.

Table No. 2: Comparison of first aid management

Measures	Ch. Sa	Su. Sa	As. San	VVJ	Pra.sa	KK
Bite the same snake or stone or stick etc immediately	x	x	✓	✓	✓	✓
Bite site smeared with sputum or ear wax	x	✓	✓	✓	✓	✓
Arista bandana	✓	✓	✓	x	✓	✓
Utkartana	✓	✓	✓	✓	✓	✓
Nispidana	x	✓	✓	✓	✓	✓
Cusana	✓	✓	✓	✓	✓	✓
Agni	✓	✓	✓	✓	✓	✓
Parisekha	✓	✓	✓	✓	✓	✓
Siravedha	✓	✓	✓	✓	✓	✓
Hridayavaranam	✓	✓	✓	✓	✓	✓
Vamana	✓	✓	✓	x	x	✓
Jalandhara	x	x	✓	✓	✓	✓

## *Samanya chikitsa :*

General treatment includes both *Mantra* and *Aushadha Prayoga*. *Bhrihatrayai* explains the general snakebite management in different way. *Charaka acharya* explains 24 treatment modalities which includes both emergency and conservatory management<sup>7</sup>. The condition of the patient decides the treatment procedure

and yoga (medicinal formulation) to be used.

- 1) *Mantra*
- 2) *Arishta (tourniquet)*
- 3) *Utkartana (incision)*
- 4) *Nishpeedana (application of pressure around bite)*
- 5) *Chooshana (suction)*
- 6) *Agni (cauterization)*
- 7) *Parisekha (washing)*
- 8) *Avagaha (immersion in water)*
- 9) *Rakthamokshana (blood letting)*
- 10) *Vamana (induction of emesis)*
- 11) *Virechana (induction of purgation)*
- 12) *Upadhana (application of flesh over an incision on head)*
- 13) *Hridayavarana (protecting heart with medicaments)*
- 14) *Anjana (application of medicaments on lower palpebral conjunctiva)*
- 15) *Nasya (intranasal drug administration)*
- 16) *Dhooma (inhalation of medicated smoke)*
- 17) *Leha (oral administration of semisolid medication)*
- 18) *Oushadha (administration of drugs)*
- 19) *Prasamana (medication for suppression of symptoms)*
- 20) *Prathisarana (stimulation of secretion)*
- 21) *Prathivisha (use of antidotes)*
- 22) *Samnjasthapana (restoration and stabilization of senses)*
- 23) *Lepa (application of medicine in paste form)*
- 24) *Mruthasanjeevana (restoration of life in dead)*

Eventhough Charaka Acharya has explained *mantra prayoga* it is not detailed. *Susrutha samhita* and *astanga sangraha* details about the importance of *mantra prayoga* but it doesn't include how *mantra prayoga* has to be performed.

**Samanaya chikitsa:** Additional treatment modalities in *keraleeya visha granthas*:

- 1) *Uttu*
- 2) *Talam*
- 3) *Tukkudhara*
- 4) *Vela Prayoga*
- 5) *Karu prayoga*

#### **Uttu<sup>8</sup>:**

The treatment procedure has mentioned in *Yogaratanakara* as *phuthkara chikitsa*. The widespread use of that treatment procedure is seen among *keraleeya* traditional *vishachikitsa* practitioner's as *UTTU chikitsa*. The references can be seen in all *keraleeya visha granthas*.

*Visha* residing in first three *dhatus* (*twak, rakta and mamsa*) eliminated by the treatment procedure called "*uttu chikitsa*". It is a procedure of blowing medicated air into both ears and at *moordha* by 3 persons at a time upto 150 times. For chewing drugs; *sunti, dushsparsha, maricha* and *vishavega* is mentioned and all these 4 drugs to be taken in equal quantity.

#### **Talam<sup>9</sup>:**

Application of medicines in vertex is termed as *talam*. It is widely practised treatment procedure among *Keraleeya Visha Vaidya's*. It is considered to be a best measure to check the spread of *visha* into deeper *dhatus*. It is usually applied as soon as the patient approaches the physician. It is advised to change the medicine applied on the vertex for every 1 ½ - 2 hr gap and continued till the treatment stops.

#### **Tukkudhara<sup>10</sup>:**

In case of poisoning, swelling with pain and local rise of temperature and pricking pain is considered as indication of *dhara (VVJ)*. In case of extreme swelling *tukkudhara* is indicated. *Jala Dhara* with specialized pot (*tukkupatra*) is considered as *tukkudhara*. Another opinion of *Dhara* with *eswaramooli* is also seen in this contest. In *VVJ*, *Nimbapatra*, parasitic plant grown on *karaskara vriksha* (*karaskarathin pullunni*), *chandana*, *eswara mooli*, *kumariswarasa*, *kusmanda*, *eranda patra*, with *jala* is indicated for continuous *dhara* over bite site. It relieves swelling and helps to reduce the complications of bite (especially stony hard edema and vesicobullous lesion formation).

In *neelakandeeyam*, it is advised to do *dhara* with 1 ½ *para jala* (37.32 l) with a pot hanged just above the bite site with a hole, through which *dhara jala* comes and this pot should be filled with *nimbapatra*. *Dhara* should be continued for 1 ½ hours. Specially mentioned drugs for *tukku dhara* includes *visanika, arkapatra, nimbapatra, kuppamanjal, karanjapatra, erandapatra*. *Swarasa* of leaves of these plants can be used instead of *jala* in *tukku dhara*.

#### **Vela Prayoga<sup>11</sup>:**

*Keraleeya visha grantha's* has given much importance to the plant *Gyndandropsis gynandra*. *Vela Prayoga* is explained in *kalavanjam, panchama paricheda* of *prayoga Sammuchaya*. It is advised to give this drug along with other drugs. The yogas mentioned for *lehya, ghrita, taila and gulika* should include 1 part *vela (samoolam)* and also indicated for *nasya, anjana* and external application incase of bleeding from hair follicles.

#### **Karuprayogam<sup>12</sup>:**

Is an additional method applied in case of severe non responding cases. A metal rod (copper / gold), shaped similar to *dhatura pushpham* for males 6 *angula* in *guda marga* and apply *paradam*. and for females 8 *angula* through *yon margam* and apply 1 *panattukkam paradam*. *Karuprayogam* is considered to be the best *kalavanjana yoga* due to medicolegal issues its use was declined even at the time of *pra. Sam*. A yoga named as *Narma Prayoga (kalavanjanam)* chapter of *panchama paricheda* was considered as best *karuprayoga* at that time.

**Table No. 3: Important yogas mentioned in *keraleeya visha granthas***

References	Gulika	Kashaya and Ghrita	Lehya
<i>Pra.Sa</i>	<i>Vilwadi gulika<sup>13</sup></i> <i>Mrutasanjevani gulika<sup>14</sup></i> <i>Jivaraksha gulika<sup>15</sup></i> <i>Hinguvadi gulika<sup>16</sup></i> <i>Tarunabhaskaram gulika<sup>17</sup></i> <i>Pavitra vatakam<sup>18</sup></i> <i>Mrutunjaya gulika<sup>19</sup></i>	<i>Pangthiprasoonadi ghritam<sup>20</sup></i> <i>Neelidaladi ghritam<sup>21</sup></i> <i>Durva ghritam<sup>22</sup></i> <i>Amukkuravayambadi kashayam<sup>23</sup></i> <i>Mustarammachadi Kashaya<sup>24</sup></i> <i>Nalpamaram kwatha with pippali<sup>25</sup></i> <i>Neelikaranjadi kashayam<sup>26</sup></i>	<i>Vishahari lehya<sup>27</sup></i> <i>Garalaghna rasayana<sup>28</sup></i>
<i>KK</i>	<i>Vishavilwadi gulika<sup>29</sup></i> <i>Vilwadi gulika</i>		<i>Neelimoooladi lehyam<sup>30</sup></i> <i>Palasakshara lehyam<sup>31</sup></i>

**Table No. 4: Important yogas for external application**

References	Nasya	Anjana	Dhara	Lepam and taila
<i>Pra.Sa</i>	<i>Bhringaraja swarasa</i> <i>Saindhava in tamboola and dhatura patra swarasa</i>	<i>Purana maricha anjana</i> <i>Garudanjan am<sup>32</sup></i> <i>Churnaraja<sup>33</sup></i>	<i>Kottam tagaradi<sup>34</sup></i> <i>Ghrita saindhava dhara<sup>35</sup></i> <i>Nimbaneelika ranja parisheka (trimoorthi yoga)<sup>36</sup></i>	<i>Sigrupunarnavadi<sup>37</sup></i> <i>Paranthyadi tailam<sup>38</sup></i>
<i>KK</i>		<i>Dasabeeja anjana<sup>39</sup></i>		

**Table No. 5: Commonly practising yogas from *Visha Vaidya jyotsnika***

Yogas	Internal	Nasyam	Anjana	External
	1) <i>Iswaramoola + sunti</i> 2) <i>Aswagandha in water</i> 3) <i>Trikatu in amla jala</i> 4) <i>Neelimoool in water</i> 5) <i>Lasuna + maricham + Hingu + sunti + pippali in Arka ksheera</i> 6) <i>Sireeshapuspha + hingu + trikatu in arka ksheera</i> 7) <i>Guduchi + maricham + chandana + ushira</i> 8) <i>sireeshapanchangam</i>	1) <i>Maricham + surasa swarasa + dronapushpi swarasa</i> 2) <i>Bhringaraja swarasa with maricham</i> 3) <i>Hingu + maricham + saindhava in Naramootra</i> 4) <i>Lasuna + hingu in chandanavari</i> 5) <i>Katakabeeja nasyam</i>		1) <i>Arkapatram + hingu</i> 2) <i>Iswaramooli + sunti</i> 3) <i>Palasa swarasa + maricham + hingu</i> 4) <i>Agaradhooma + tankana</i> 5) <i>Neelimoool in water</i> 6) <i>Karanjamoola + maricham</i>

Table No. 6: Visesha chikitsa : Darveekara visha vega chikitsa

Vegas	Susrutha samhita	Astangasangraha
1 <sup>st</sup> vega	Raktamokshana	Raktamokshana and madhusarpi agadapana
2 <sup>nd</sup> vega	Vamanam Madhu + sarpi agadam	Vamana and agadapanam
3 <sup>rd</sup> vega	Anjanam & Nasyam	Nasya and anjana
4 <sup>th</sup> vega	Vamanam & yavagu	Vamana, yavagau pana
5 <sup>th</sup> vega	Seetopacharam Vamanam with teekshana dravya Tikshna Virechana	Vamana, yavagau pana and sheetopachara
6 <sup>th</sup> vega	Seetopacharam Vamanam with teekshana dravya Tikshna Virechana	Vamana, yavagau pana and sheetopachara
7 <sup>th</sup> vega	Tikshna Anjanam Avapeedana Nasyam Apply blood rich flesh on kakapada shaped incision on scalp	Teekshana anjana and nasyam, kakapada chikitsa

Table No. 7: Darvikara vishavega chikitsa in keralaeeya vishagranthas

Vega	Prayoga sammuchaya <sup>40</sup>
1 <sup>st</sup> vega	Siravedham
2 <sup>nd</sup> vega	Siravedham + internally Maricha + ghritham
3 <sup>rd</sup> vega	Chandhana + ushira as seethakashayam for internal administration
4 <sup>th</sup> vega	Kashayam with Tanduleeyakam + aswagandha
5 <sup>th</sup> vega	Siravedham of 5 veins teekshna nasyam
6 <sup>th</sup> vega	Bhringaraja swarasa nasyam
7 <sup>th</sup> vega	Teekshna nasya and anjana

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